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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,097	06/27/2000	Yukio Shakuda	2005.0020003	6648
26111	7590	03/15/2004	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/604,097

Applicant(s)

SHAKUDA, YUKIO

Examiner

Tuan N Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/14/2003, 11/14/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13,14,16,18,20,21 and 53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13,14,16,18,20,21 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/14/03, 10/29/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

IDS

1. The IDS submitted on 11/14/2003, 10/29/2003, 10/07/2003 were received. However, the applicant requires to submit all the cited documentation for examination, because they are not available for examination.

Drawings

2. New corrected drawings are required in this application because the figures do not reflect claim invention. Drawing submitted on 10/07/2003.

Response to Amendment

3. In respond to applicant's amendment filed 07/14/2003, claims 13, 14, 16, 18, 20, 21 have been amended, claims 1-12, 15, 17, 19, 22-52 have been canceled, and claim 53 has been added. Claims 13, 14, 16, 18, 20, 21, and 53 are pending.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 13, 14, 16, 18, 20, 21, and 53 are rejected under 35 U.S.C 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, **for example**.

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Claim 13 recites a semiconductor light emitting device comprising: an electrode, a substrate, a gallium nitride emitting portion including at least an n-type and p-type layer in between said electrode and substrate, and *a buffer region interposed between said substrate and said semiconductor layers, wherein **buffer region** comprises first laser including In*. It is vague and indefinite as to the structure and relationship of the buffer region between the said substrate and semiconductor layers; It is not clear if the buffer region is on top or bottom of gallium nitride semiconductor layers, or if it interposed only in a specific region in between substrate and semiconductor. There is insufficient means, structure and functional relationship, which render the claims vague and indefinite. Claims 14, 16, 18, 20, 21, and 53 are rejected base on the same reason.

Claim Rejections - 35 USC § 102

6. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 13 is rejected under 35 U.S.C. 102(b) as being unpatentable Ishikawa et al. (US 5585649), or Nakamura et al. (US 5734182) or (US 5578839), or Shakuda (US 5557115)/ (JP 06-189565)/(JP 06-194224).

With respect to claim 13 Ishikawa et al. '649 shows in (fig 1,11-12) and disclosed in the ABSTRACT and column 2, a semiconductor light emitting device comprising an electrode, a substrate a light emitting portion of GaN semiconductor layer with an n-type and p-type layer

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between said electrode and substrate, and a buffer region interposed between substrate and semiconductor layers, wherein region comprises a first layer including In (Col. 1-12).

With respect to claim 13 Nakamura et al. '182 or '839 shows in (Fig 1: 12-26) a semiconductor light emitting device comprising an electrode, a substrate a light emitting portion of GaN semiconductor layer with an n-type and p-type layer between said electrode and substrate, and a buffer region interposed between substrate and semiconductor layers, wherein region comprises a first layer including In.

With respect to claim 13, Sakuda '115 shows in (Fig 1) a semiconductor light emitting device comprising an electrode, a substrate a light emitting portion of GaN semiconductor layer with an n-type and p-type layer between said electrode and substrate, and a buffer region interposed between substrate and semiconductor layers, wherein region comprises a first layer including In.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

9. Claims 14, 16, 18, 20, 21, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US 5585649), or Nakamura et al. (US 5734182) or (US 5578839), or Shakuda (US 5557115)/ (JP 06-189565)/(JP 06-194224)..

With respect to claims 14, 16, 18, 20, 21, and 53, the claims further require that the buffer and first region has different temperature, and conductivity or resistance of one layer is greater than the other, and a p-type of contact between said semiconductor and said electrode. Ishikawa '649 disclosed the above and further discloses the variety of thickness of different layers and its materials (Col 4-6; Table 1), and disclosed the p-type contact between said semiconductor and electrode (Col 6: 31-35; Col 4-8). It is within one skill in the art to recognize that, when a layer made up of different materials and thickness, it inherently has different conductivity or resistance or different temperature requirement for formation. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Communication Information

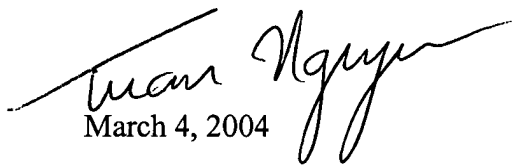
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (571) 272-1941. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen



March 4, 2004



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